



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,773	01/05/2004	Shi-Wei Lee	LEES3023/EM	1656
23364	7590	11/20/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			TRAN, DZUNG D	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary	Application No.	Applicant(s)	
	10/750,773	LEE ET AL.	
	Examiner	Art Unit	
	Dzung D. Tran	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-13, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4-10, 14-17 and 20-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoo et al.

US Publication no. 2005/0053375.

Regarding claim 1, Yoo discloses in Figure 5, a multi-wavelength optical packet switch system with shared output buffer, comprising:

N input fibers and N output fibers 134, each fiber being able to transmit an M-wavelength optical signal, which has M wavelength, where N, M are positive integers (page 4, paragraph 0039);

an input device 138, connected to the N input fibers to separate the M-wavelength optical signal in each input fiber into M input optical signals corresponding to the M wavelengths;

a wavelength converter 140, connected to the input device to tune wavelengths of the input optical signals;

a wavelength router 142, connected to the wavelength converter to switch packets of each optical signal outputted by the wavelength converter;

an output buffer 162, connected to the wavelength router to provide output optical packets of the wavelength router with time delay from 0 to L packet frames;

a wavelength classifier 146, connected to the output buffer to tune wavelengths for the output optical packets to wavelengths of the corresponding output fibers; and

a control device 137, connected to the wavelength converter to read packet headers of the input optical signals to accordingly analyze output fiber fields of all packet headers, thus obtaining corresponding output fibers and output conflicts for adjusting the wavelength converter and subsequently completing packet switching performed by the wavelength router (page 4, paragraph 0039).

Regarding claim 2, Yoo discloses wherein the input device consists of N optical demultiplexers 138, each having an input terminal and M output terminals, the input terminal being connected to one of the input fibers for separating the M-wavelength optical signal in the input fiber into M input optical signals corresponding to the M wavelengths and thus the M output terminals outputting the M input optical signals respectively.

Regarding claim 3, Yoo discloses wherein the wavelength converter consists of N x M tunable wavelength converters 140, ((I-1) x M)-th to (I x M-1)-th tunable wavelength converters connected respectively to M output terminals of I-th optical demultiplexer, where N, M, I are positive integers.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-13 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. US Publication no. 2005/0053375 in view of Hunter et al. , WASPNET: A Wavelength Switch Packet Network, March 1999, IEEE communication Magazine, pp. 120-129.

Regarding claim 11, Yoo discloses all limitations except for a second wavelength router, connected to the second wavelength converter to switch packets of each optical signal outputted by the second wavelength converter. Hunter et al., from the same field of endeavor, discloses in Figure 3, a wavelength switch packet network having a first wavelength router (i.e., first AWG) connect to a wavelength converter (TWC; i.e., second wavelength converter) and a second wavelength router (i.e., second AWG) wherein the second wavelength router (i.e., second AWG), connected to the second wavelength converter to switch packets of each optical signal outputted by the second wavelength converter (see page 124). At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to replace the wavelength router 142 of Yoo with the wavelength router shown in Figure 3 of Hunter. One of ordinary

Art Unit: 2613

skill in the art would have been motivated to do that in order to prevent the loss of packets due to over flow buffer.

Regarding claim 12, Yoo discloses wherein the input device consists of N optical demultiplexers 138, each having an input terminal and M output terminals, the input terminal being connected to one of the input fibers for separating the M -wavelength optical signal in the input fiber into M input optical signals corresponding to the M wavelengths and thus the M output terminals outputting the M input optical signals respectively.

Regarding claim 13, Yoo discloses wherein the wavelength converter consists of $N \times M$ tunable wavelength converters 140, $((l-1) \times M)$ -th to $(l \times M-1)$ -th tunable wavelength converters connected respectively to M output terminals of l -th optical demultiplexer, where N , M , l are positive integers.

Regarding claim 18, Hunter discloses wherein the second wavelength router is an arrayed waveguide grating having $N \times M$ input terminals and $(L+1) \times N$ output terminals for switching packets of optical signals of the second wavelength converter, where N , M , L are positive integers.

Regarding claim 19, Yoo discloses wherein the output buffer 162 consists of N delay devices, each delay device having $(L+1)$ optical delay elements numbered 0 to L and number p optical delay element providing time delay with p packet frames, where N , L , p are positive integers (page 4, paragraph 0039).

5. Claims 4-10, 14-17 and 20-23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Lee et al. U.S. Publication no. 2004/0223762. High speed optical routing apparatus and method.
- b. Xue et al. U.S. Patent no. 7,120,157. Edge router for optical label switch network
- c. Yoo U.S. Publication no. 2003/0133641. Integrated optical router

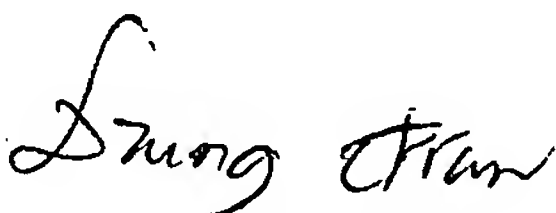
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran
11/08/2006


DZUNG TRAN
PRIMARY PATENT EXAMINER